

This listing of claims will replace all prior versions, and listings, of claims in the application:

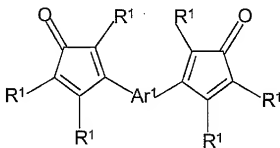
LISTING OF CLAIMS:

1. (Currently Amended) A process of removing impurities from a cured low dielectric constant organic polymeric film disposed on a semiconductor device comprising disposing a low dielectric constant curable ~~polyarylene resin~~ ~~organic-polymeric~~ film on an electrically conductive surface of a semiconductor device; curing said ~~polyarylene resin~~ ~~organic-polymeric~~ film disposed on said semiconductor device; and contacting said cured ~~polyarylene resin~~ ~~organic-polymeric~~ film with supercritical carbon dioxide and, optionally, one or more solvents.

2. (Cancelled).

3. (Currently Amended) A process in accordance with Claim [[2]] 1 wherein said polyarylene resin is formed from a precursor composition which comprises a compound having cyclopentadiene functional groups, acetylene functional aromatic compounds and/or partially polymerized reaction products of said compounds.

4. (Original) A process in accordance with Claim 3 wherein said compound having biscyclopentadienone functional groups is a biscyclopentadienone of the formula

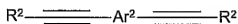


where R¹ is independently hydrogen or an unsubstituted or inertly substituted aromatic moiety; and Ar¹ is an unsubstituted or inertly substituted aromatic moiety; and said acetylene functional aromatic compound is a polyfunctional acetylene of the formula



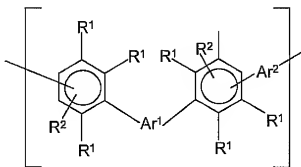
where R^2 is independently hydrogen or an unsubstituted or inertly substituted aromatic moiety;
 Ar^3 is an unsubstituted or inertly substituted aromatic moiety; and y is an integer at least 3.

5. (Original) A process in accordance with Claim 4 wherein said precursor composition includes a diacetylene of the formula

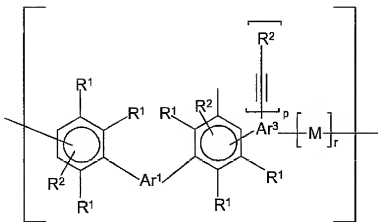


where Ar^2 is an unsubstituted or inertly substituted aromatic moiety; and R^2 has the meanings given above.

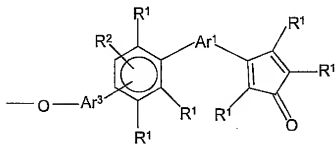
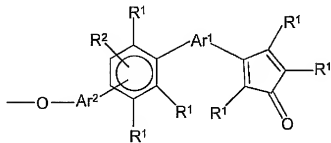
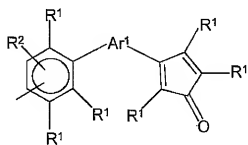
6. (Original) A process in accordance with Claim 4 wherein said precursor composition comprises a curable polymer of the formula $[\text{A}]_w[\text{B}]_z[\text{EG}]_v$
 where A has the structure

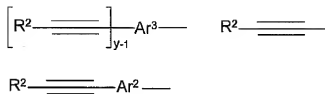


B has the structure



and EG are end groups having a formula

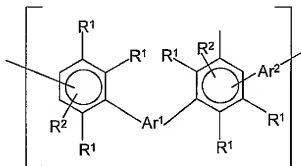




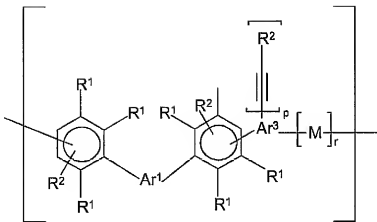
where R^1 , R^2 , Ar^1 , Ar^3 and y have the meanings given above; M is a bond; p is the number of unreacted acetylene groups in the given mer unit; r is 1 less than the number of reacted acetylene groups in the given mer unit, with the proviso that

$p+r=y-1$; w is an integer of 0 to about 1,000; z is an integer of 1 to about 1,000; and v is an integer of at least 2.

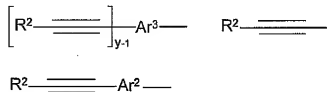
7. (Original) A process in accordance with Claim 5 wherein said precursor composition comprises a curable polymer of the formula $[\text{A}]_w[\text{B}]_z[\text{EG}]_v$, where A has the structure



B has the structure



and end groups EG have the formula



where R^1 , R^2 , Ar^1 , Ar^2 , Ar^3 and y have the meanings given above; M is a bond; p is the number of unreacted acetylene groups in the given mer unit; r is 1 less than the number of reacted acetylene groups in the given mer unit, with the proviso that $p+r=y-1$, w is an integer of 0 to about 1,000; z is an integer of 1 to about 1,000; and v is an integer of at least 2.

8. (Cancelled).

9. (Currently Amended) A process in accordance with Claim ~~[[8]]~~ 18 wherein said poly(silsesquioxane) is poly(methylsilsesquioxane).

10. (Currently Amended) A process in accordance with Claim ~~[[8]]~~ 18 wherein said poly(silsesquioxane) is poly(hydridosilsesquioxane).

11. (Original) A process in accordance with Claim 9 wherein said poly(methylsilsesquioxane) is cured at a temperature of up to about 450°C.

12. (Original) A process in accordance with Claim 10 wherein said poly(hydrisilsesquioxane) is cured at a temperature of up to about 210°C.

13. (Currently Amended) A process in accordance with Claim 1 wherein said polyarylene resin ~~organic-polymeric~~ film is an interlevel or intralevel dielectric in said semiconductor device.

14. (Currently Amended) A process in accordance with Claim 1 wherein said supercritical carbon dioxide contacts said cured low dielectric constant polyarylene resin ~~organic-polymeric~~ film with at least one solvent.

15. (Original) A process in accordance with Claim 14 wherein said solvent is selected from the group consisting of cyclohexanone, methylisobutylketone, mesitylene, alcohols having the structural formula ROH, where R is C₄-C₁₀ alkyl or C₃-C₁₀-cycloalkyl, and C₅-C₈ cycloalkyls.

16. (Original) A process in accordance with Claim 15 wherein said solvent is present in a concentration in a range of between about 1% and about 80%, said percentages being by volume, based on the total volume of said supercritical carbon dioxide-solvent composition.

17. (Original) A process in accordance with Claim 16 wherein said solvent is present in a concentration in a range between about 1% and about 50%.

18. (New) A process of removing impurities from a cured low dielectric constant organic polymeric film disposed on a semiconductor device comprising disposing a low dielectric constant curable poly(silsesquioxane) film on an electrically conductive surface of a semiconductor device; curing said poly(silsesquioxane) film disposed on said semiconductor device; and contacting said cured poly(silsesquioxanes) with supercritical carbon dioxide and, optionally, one or more solvents.